

REMARKS

This is a response to the Office Action having a date of mailing of April 4, 2006 for the above-referenced matter.

In the Office Action, the Examiner has rejected claims 1 through 7 and 13 as anticipated by United States Patent 5,450,270 to Tokahashi. In response, the applicant has cancelled claim 1 and incorporated the claim limitations of claim 1 into claim 2. The dependency of claims 6, 7, 8, 9, and 11 have been changed to depend from 2 instead of claim 1.

With respect to the Examiner's rejection based upon Tokahashi, the applicant respectfully points out, that Tokahashi does not teach a system whereby the current sent to the valve is reduced in response to the current sensed in the valve. Such a system is claimed by applicant in claims 2 through 12, thus applicant believes claims 2 through 12 are allowable over this reference. Although the Examiner did not reject claims 8-12 based on this reference, the applicant has amended claims 8-12 to read that the current to the valve is changed, rather than the voltage being changed, as previously claimed in claims 8-12. Such a change in language brings claims 8-12 into line with claims 2-7, hence the discussion regarding Tokahashi should apply to claims 8-12 as well, although not originally rejected by this reference.

Tokahashi specifically teaches a system whereby current is sensed in the valve, and in response to the current, the voltage pulse width sent to the valve is thereby adjusted. Specifically, as shown in figure 6-d, the corrected voltage curve results in a voltage pulse that is lengthened, rather than the current being adjusted, as claimed by applicant. Further, the Examiner's position that figures 6-b and c show an adjustment of current, specifically a reduction in current, are incorrect. In Tokahashi, the current rise rate is reduced at a certain point, such as C in figure 6-b, but the current itself, namely the amplitude, is not reduced. It is the current amplitude which is discussed and claimed by applicant. Hence, Tokahashi does not disclose nor does it anticipate claims 2 through 12.

With respect to claim 13, claim 13 has been cancelled, and its claim limitations added to those of claim 14. Since claim 14 was not rejected with respect to Tokahashi, claim 14 is allowable over this reference.

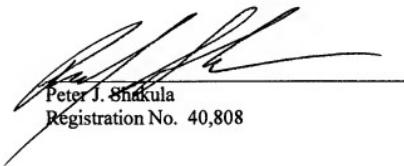
The examiner has rejected claims 1, and 8-18 as being anticipated by US Patent 6,978,978 to Near. Claim 1 has been cancelled, and hence is moot. Similarly, claims 13, 16, and 17 have been cancelled and are moot.

To summarize the examiner's position, Near discloses a system wherein the current in the valve is sensed by a sensor, and in response, the voltage applied to the valve is changed, as opposed to the current changing, as set forth by the examiner's explanation of the teachings of Takahashi. (As previously explained, it is believed that the examiner's analysis of Takahashi is incorrect). Thus, to avoid Near, applicant has amended claims 8-12 to recite a control of the current supplied to the valve, not a voltage as recited in Near. Thus, just as Near does not anticipate claims 2-7 which recite using current for control, it does not anticipate claims 8-12 as amended.

With respect to claim 14, it has been amended to adopt the limitations of claim 13, and clause "d" has been amended to recite "providing current" rather than "modifying voltage". As previously discussed, this change avoids the Near reference, as Near adjusts the voltage applied to the valve, not the current. Thus claims 15 and 18, which depend from claim 14 are also allowable.

WHEREFORE, in view of these amendments, the applicant requests consideration of the amended claims.

Respectfully submitted,



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